Claims:

What is claimed is:

1. A wireless communication enabled meter comprising:

a metering device generating meter data ; and

an interface facilitating communication between the metering device and a self-configuring wireless communication system, wherein the meter data can be read out via a wireless network.

2. The meter of claim 1 wherein the metering device comprises a programmable metering device capable of at least one of measuring usage data, monitoring usage and controlling usage.

3. The meter of claim 1 wherein the self-configuring wireless communication system comprises a self-configuring wireless communication system using a wireless transmission protocol.

4. The meter of claim 3 wherein the wireless transmission protocol comprises a wireless transmission protocol using short-range radio links.

5. The meter of claim 1 wherein the meter is for measuring an utility and the wireless network comprises a wireless network capable of monitoring and controlling usage of the utility.

6. The meter of claim 1 wherein the meter comprises the self-configuring wireless communication system.

7. The meter of claim 1 wherein the self-configuring wireless communication system comprises a self-configuring wireless transceiver.

8. The meter of claim 1 wherein the interface comprises a software module.

9. The meter of claim 1 wherein the interface comprises at least one of hardware and firmware.

10. The meter of claim 1 wherein the wireless network comprises a communications chip configured to support a self-configuring wireless transmission protocol using short-range radio links.

11. A self-configuring wireless network comprising:

a first piconet including at least one self-configuring virtual node; and

a virtual gate providing a communication point between the first piconet and at least one external network.

12. The network of claim 11 wherein the at least one self-configuring virtual node and the first virtual node comprise the same device.

13. The network of claim 11 wherein the at least one self-configuring first virtual node comprises a first virtual node capable of executing a self-configuration routine to connect itself with a piconet if the virtual node is not connected to a piconet or the virtual node's connection to a piconet has been interrupted.

14. The self-configuring wireless network of claim 13 wherein the self-configuration routine comprises a self-configuration routine based on a set of transmission rules.

15. The self-configuring wireless network of claim 11 wherein the virtual gate comprises a computer network gateway enabled for communications.

16. The self-configuring wireless network of claim 11 further comprising a second piconet operable to communicate with the first piconet.

17. The network of claim 16 wherein the communications between the first piconet and the second piconet occur between a virtual node in the first piconet and a virtual node in the second piconet.

18. The network of claim 11 further comprising a second self-configuring virtual node wherein the first self-configuring virtual node communicates with the second self-configuring virtual node through a communications link.

19. The network of claim 18 further wherein the communications link comprises a first antenna, having a connection with the first self-configuring virtual node, and a second antenna, having a connection with the second self-configuring virtual node and communicating with the first antenna.

20. The network of claim 11 wherein the first virtual node comprises a device enabled for wireless communication using a wireless transmission protocol using short-range radio links.

21. The network of claim 20 wherein the protocol uses at least one multiplexed communication channel to communicate, each channel comprising a different transmission frequency.

22. The network of claim 21 wherein a first protocol channel is used for upstream communication and a second protocol channel is used for downstream communication.

23. The network of claim 11 wherein the first self-configuring virtual node comprises a routing table for configuring the first virtual node.

24. The network of claim 23 wherein the routing table comprises information about other virtual nodes that are potential gateways to a virtual gate for the first virtual node.

25. The network of claim 23 wherein the routing table comprises information about other virtual nodes that have a confirmed route to a virtual gate using the first virtual node as an intermediate hop.

26. The network of claim 11 wherein an internet protocol address of the first virtual node comprises an encryption key, the encryption key being used by the first virtual node to decode incoming data.

27. The network of claim 26 wherein the encryption key is used to encode outgoing data.

28. The network of claim 11 wherein the virtual gate wirelessly communicates with the at least one external network.

29. The network of claim 11 wherein the virtual gate communicates with the at least one external network through wired communication.

30. The network of claim 11 wherein the virtual gate comprises an intelligence module.

31. The network of claim 30 wherein the intelligence module stores geographic location of all virtual nodes within a certain distance of the virtual gate and the location of a specific virtual node may be determined from the virtual gate.

32. The network of claim 30 wherein the intelligence module stores a list of all virtual nodes presently communicating with the virtual gate.

33. The network of claim 11 wherein the virtual gate facilitates connection to a central controller.

34. The network of claim 11 wherein the first virtual node comprises a meter.

35. The network of claim 11 wherein the first virtual node comprises a vending machine.

36. The network of claim 11 wherein the virtual node comprises an alarm system.

37. The network of claim 11 wherein the virtual node comprises electricity distribution equipment.

38. The network of claim 11 wherein the first virtual node is capable of reconfiguring itself if it is not connected to a piconet.

39. The network of claim 11 further comprising a second self-configuring virtual node wherein the first virtual node and the second virtual node exchange messages.

40. The network of claim 39 wherein the first virtual node and the second virtual node periodically check each other for messages to be exchanged.

41. A method of configuring a first virtual node comprising:

periodically polling other virtual nodes of a first piconet of which the first virtual node is a member;

performing a self-configuration cycle to look for a second piconet to join if the first piconet is not intact; and

performing a self-configuration cycle to look for second piconet to join if the first piconet is not connected to the first virtual node.

42. The method of claim 41 wherein the self-configuring cycle is based on a set of transmission rules.

43. The method of claim 42 wherein the set of rules comprises at least one of: connecting only with a piconet in search of a virtual node, a maximum number of hops that can be used to reach a communication point, and connecting to a piconet having the smallest number of hops to the communication point.

44. The method of claim 41 further comprising:

programming the virtual node to include information regarding the geographic location of the closest communication point.

45. A method of configuring a network comprising:

broadcasting a request for a virtual gate;

storing a route to a designated virtual gate in a routing table based on a response from a configured virtual node if a valid response is received from the configured virtual node;

storing transport-agent parameters for access to the designated virtual gate in the routing table if a message is received from the designated virtual gate; and

configuring a metric indicating proximity to the designated virtual gate.

46. The method of claim 45 wherein the metric comprises 0 if the access to the designated virtual gate comprises a direct link.

47. The method of claim 45 further comprising receiving a request message from a path seeking virtual node; and

transmitting a response to the path seeking virtual node request message comprising availability as a path to the designated virtual gate and the metric.

48. The method of claim 45 wherein the path seeking virtual node is an unconfigured virtual node.

49. The method of claim 45 wherein the path seeking virtual node is a configured virtual node searching for a more efficient path.

50. The method of claim 45 further wherein storing a route to a designated virtual gate based on the response received from the configured virtual node comprises:

receiving a responses from a plurality of virtual nodes;

choosing a first configured node to be a gateway based on metric and transport-agent parameters; and

transmitting an acknowledgement to the first configured virtual node.

51. A method of data propagation through a network comprising:

configuring a path including intermediate virtual nodes to a destination specified in a data packet; and

transmitting the data packet.

52. The method of claim 51 further comprising:

decrementing an address of the data packet at each virtual node in which the data packet is received.

53. The method of claim 52 wherein the data packet is discarded if the address reaches zero.

54. The method of claim 51 further comprising making an entry in the data packet to record the route of the packet at each virtual node in which the data packet is received.

55. The method of claim 51 further comprising assigning a destination to the data packet.

56. The method of claim 55 wherein the destination comprises a designation of 0 if the destination is a virtual gate.

57. The method of claim 51 further comprising receiving an acknowledgement when the data packet is received at the specified destination.

58. The method of claim 57 wherein the acknowledgement is piggybacked on other data traveling through the network.

59. The method of claim 51 further comprising performing a search for a new path to the specified destination if packet delivery fails.

60. The method of claim 59 wherein performing the new search comprises transmitting a request for a path to a virtual gate.

61. A self-configuring network comprising:

a first sub-network including a first self-configuring virtual node;

a second sub-network including a second self-configuring virtual node, and connected to the first sub-network, through a communication link between the first self-configuring virtual node and the second self-configuring virtual node, to form a network cluster; and

a virtual gate having a connection with a third self-configuring virtual node in the first sub-network, and providing a communication point between the network cluster and at least one external network.

62. The method of claim 61 wherein each of the first sub-network and the second sub-network comprise a piconet comprising a virtual node.

63. The self-configuring network of claim 61 wherein the first virtual node and the second virtual node each comprise a virtual node capable of executing a self-configuration routine to connect itself with a portion of a network if the virtual node is not connected to a portion of a network or the virtual node's connection to a portion of a network has been disturbed.

64. The network of claim 61 wherein the second sub-network is geographically closer to the virtual gate than the first sub-network.

65. The network of claim 61 wherein there is a third sub-network between the first sub-network and the second sub-network wherein the third sub-network is not connected to the first sub-network or the second sub-network.